

REMARKS

This is intended as a full and complete response to the Final Office Action dated March 4, 2004, having a shortened statutory period for response set to expire on June 4, 2004. Claims 24, 26, 30-31, 33-36, 38, 42, 43, and 45 are pending in the application and are shown above. Claims 24, 26, 30-31, 33-36, 38, 42, 43 & 45 have been considered by the Examiner and stand rejected. Applicants cancel claims 24, 26, 30-31, and 33, without prejudice. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 24, 26, 30, 31, 33-36, 38, 42-43 and 45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25, 30-34, 50-51, 55-61, 65, and 85-90 of U.S. Patent No. 6,537,733, *Campana, et al.* Applicant respectfully responds to this rejection. Applicants have enclosed a terminal disclaimer and respectfully request withdrawal of the rejection.

Claims 24, 26, 31, 32-36, 38, 43 and 45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Park et al.*, U.S. Patent No. 5,656,337 discussed in Sections 8 and 13 of paper #21 (mailed 04/18/03), in view of *Mase et al.*, U.S. Patent No. 4,634,496, as applied in paper #23 (mailed 11/05/03), or paper #21, sections 6 and 13, respectively. The Examiner asserts that it would have been obvious to one or ordinary skill in the art to modify the process of *Park et al.* with the dielectric material as taught by *Mase et al.*.

Alternatively, Claims 24, 26, 30-31, 33-36, 38, 42-43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mase et al.*, in view of *Park et al.*, and *Robertson et al.*, EP 0 630 989 A2. The Examiner asserts that it would have been obvious to one or ordinary skill in the art to use the plasma treatment technique of *Robertson et al.* as motivation in the combination of *Park et al.* and *Mase et al.*.

Applicants respectfully respond to the rejection and the alternative rejection.

Park et al. discloses treating a deposited material to have an electrical polarity and then depositing a second material having an electrical polarity opposite of the surface of the treated first material. The deposited material described in *Park et al.* comprises O₃-TEOS or O₃-HMDS oxide layers with additional dielectric layers comprising boron and phosphorous doped silica glass (BPSG) (See, col. 3 lines 37-64,

and col. 4, lines 27-36.). *Park et al.* further discloses that the plasma treatment takes advantage of the phenomenon of the deposition rate of O₃-TEOS materials, and thus, teaches away from different materials.

Mase et al. discloses a two-layer structure using an etching stopper first insulating film and a readily etched second insulating film disposed thereon, and then using a resist layer for a two step etching process through the second and first insulating films. *Mase et al.* does not teach plasma treating between layer depositions. There is no suggestion or motivation in either *Park et al.* or *Mase et al.* to exchange the two different etch resistant materials of *Mase et al.* with the polarized layers of *Park et al.*.

Alternatively, *Robertson et al.* discloses subjecting the surface of a substrate having deposited layers to a plasma of an inert gas and then deposition of a dielectric layer thereon.

The above references do not suggest or motivate plasma treatment of a silicon carbide layer to improve adhesion to a layer comprising a silicon-carbon-oxygen based material. Additionally, Laboda et al. (U.S. Patent Serial No. 5,818,071, in accompanying 1449 form), discloses depositing silicon oxycarbide on a silicon carbide layer without the application of an intervening plasma treatment to improve adhesion.

Thus, the combination of *Mase et al.*, *Park et al.*, and/or alternatively, *Robertson et al.*, does not teach, show, or suggest depositing a silicon carbide layer on a semiconductor substrate, treating the silicon carbide layer with a plasma consisting essentially of an inert gas, and depositing a layer comprising a silicon-carbon-oxygen based material over the silicon carbide layer, as recited in claim 34 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the Final Office Action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this Final Office Action.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,


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